

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the application of

Inventor: William E. Webler, et al.

Serial No. 10/025,515

Filed: December 18, 2001

For: ROTATABLE FERRULES AND
INTERFACES FOR USE WITH AN
OPTICAL GUIDEWIRE

Examiner: John P. Leubecker

Group Art Unit: 3739

Confirmation No.: 6307

Client ID/Matter No. ACSI 60271 (2168P)

February 14, 2007

APPELLANT'S BRIEF

MS: Appeal Brief Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appellant's Brief is being filed in response to the Final Office action dated August 30, 2006 and in furtherance to the Notice of Appeal dated November 30, 2006. The fees required under § 1.17 are submitted herewith. In the event additional fees are required, authorization is hereby provided to charge our Deposit Account No. 06-2425 any fees due in connection with this paper.

This brief contains items under the following headings, and in the order set forth below:

- I. REAL PARTY IN INTEREST
- II. RELATED APPEALS AND INTERFERENCES
- III. STATUS OF CLAIMS
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- V. SUMMARY OF THE CLAIMED SUBJECT MATTER
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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the following party: Advanced Cardiovascular Systems, Inc., 3200 Lakeside Drive, Santa Clara, CA 95054.

II. RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly effect, or be directly effected by, or have a bearing on the Board's decision on this appeal, it is to be noted that is believed there are no such appeals or interferences known to the applicant.

III. STATUS OF CLAIMS

The status of the claims in this application are:

A. Total Number of Claims in the Application

The claims in the application are: Claims 1-9, 17-19 and 31-35.

B. Status of All of the Claims

Each of pending claims 1-5, 8, 9, 17, 19 and 31-34 stand as finally rejected under 35 U.S.C. § 102(b). Claim 18 has been withdrawn from consideration. Claim 35 is allowed and claims 6 and 7 were objected to as being dependent upon a rejected base claim but were deemed allowable if rewritten in independent form.

C. Claims on Appeals

The claims on appeal are each of pending claims 1-5, 8, 9, 17, 19 and 31-34.

IV. STATUS OF AMENDMENTS

On August 30, 2006, claims 1-5, 8, 9, 17, 19 and 31-34 were finally rejected under 35 U.S.C. § 102(b) as being anticipated. The finally rejected claims are the subject of this appeal.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

As recited in independent claims 1 and 17 and as set forth in the specification, in one aspect, the present application is directed towards an elongated intracorporeal optical instrument 16 or a system 10 including an optical instrument comprising an elongated shaft 18, an optical fiber 26, and a ferrule 22 connected to the optical fiber 26. (See original claims; paragraph [0077] of the specification; and FIG. 1). Moreover, the elongated shaft 18 has a longitudinal axis 32, proximal 38 and distal ends 42 and a substantially constant outer diameter (See FIG. 1; paragraph [0010]). The elongated shaft 18 further includes an optical pathway for passing

optical radiation and has an internal surface defining an internal chamber (See paragraph [0077] and FIG. 3A).

Additionally, the elongated optical fiber 26 of the apparatus claimed in independent claims 1 and 17 extends substantially an entire length of the internal chamber of the elongated shaft 18 (See FIG. 3A) and further includes a ferrule 22 having an outer diameter which is substantially the same as an outer diameter of a proximal portion of the elongated shaft 18 (See FIG. 1). Also, as required by independent claim 1, the ferrule 22 is configured to have a first position where it is secured to the elongated shaft 18 and a second position in which the ferrule 22 is released from the shaft and free to rotate (See paragraph [0098]). Furthermore, as recited in independent claim 17, the ferrule 22 is configured to engage a rotatable connector such that the ferrule 22 rotates when engaged to a mechanical connector and when the connector rotates (See paragraphs [0019] and [00143]).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-5, 8, 9, 17, 19 and 31-34 were improperly rejected under 35 U.S.C. § 102(b) as being anticipated by Forkner et al. (4,750,476); and whether claims 1-5, 8, 9, 17, 19 and 31-34 were improperly rejected under § 102(b) as being anticipated by Hamlin et al. (Re. 36,434).

VII. ARGUMENT

A. Overview

In order for there to be anticipation of a claim under 35 U.S.C. § 102(b), the invention recited in the claim must be "known or used by others in this country or patented or described in a printed publication in this or a foreign country, before the invention thereof by the Applicant

for patent." Significantly, the case law in the area of patents has provided that for there to be an anticipation each and every limitation recited in a claim must be taught or disclosed in the reference being relied upon as anticipatory art.

It is respectfully submitted, however, that the subject matter recited in pending claims 1-5, 8, 9, 17, 19 and 31-34 of the present application is not anticipated by either Forkner et al. or Hamlin et al.

B. Claims 1-5, 8, 9, 17, 19 and 31-34: § 102(b) as being anticipated by Forkner et al.

In the outstanding final Office action dated August 30, 2006, claims 1-5, 8, 9, 17, 19 and 31-34 were rejected under 35 U.S.C. § 102(b) as being anticipated by Forkner et al. (4,750,476). In so rejecting the claims, the Examiner referred the Applicants attention to the March 2006 Office action which characterized the teachings of the cited Forkner et al. patent and specifically stated "As to the newly added limitations, although the optical fiber (41) extend "a length" of the internal chamber, it also extends substantially the entire length of the internal chamber. In addition, the optical fiber (41) is directly connected to the ferrule (21) at least at location (49) (note Fig. 1). Furthermore, considering elements (19) and (23) as the elongated shaft and tube (17) as part of the optical fiber, the optical fiber is also directly connected to the ferrule."

With respect to the rejection of claims 1-5, 8, 9, 17, 19 and 31-34 under § 102(b) in view of the Forkner et al. patent, it is respectfully submitted that it is beyond the teachings of the Forkner et al. patent to characterize nut 19 and cannula 23 as being part of the light transmitting fiber 41 disclosed in the Forkner et al. patent. Clearly, the Forkner et al. patent itself does not teach that the nut 19 and cannula 23 form part of the light transmitting fiber 41 as such items are identified and described separately from the light transmitting fiber 41. Accordingly, it is respectfully submitted that the Examiner has not shown that Forkner et al. teaches a ferrule

having an outer diameter which is substantially the same as that of the recited elongated shaft proximal portion, as is required by independent claims 1 and 17 and their respective dependent claims. Moreover, it is respectfully submitted that Forkner et al. does not teach as is recited in independent claim 1 and its dependent claims 2-5, 8, 9, 31 and 32, a ferrule having a first position where it is secured to the elongated shaft and a second position where it is released from the shaft. Forkner et al. also does not teach the ferrule arrangement recited in independent claim 17 and its dependent claims 19, 33 and 34, namely, a ferrule configured to engage a rotatable mechanical connector such that the ferrule rotates when engaged to the mechanical connector.

Therefore, since there is, inter alia, no teaching of the elongated intracorporeal optical device including the ferrule, as recited in each of the pending claims, the Forkner et al. patent does not teach each and every limitation recited in the pending claims as is required under § 102(b). Accordingly, it is respectfully submitted that claims 1-5, 8, 9, 17, 19 and 31-34 define subject matter which is allowable over the Forkner et al. patent.

Thus, it is respectfully submitted that the rejection of claims 1-5, 8, 9, 17, 19 and 31-34 under § 102(b) in view of Forkner et al. was made in error.

C. Claims 1-5, 8, 9, 17, 19 and 31-34: § 102(b) as being anticipated by Hamlin et al.

It is also respectfully submitted that the pending claims are not anticipated by the Hamlin et al. patent. In finally rejecting the claims, the Examiner stated that "Hamlin et al. discloses an optical instrument (camera 22) including an optical connector (lens, CCD chip optically connected to the optical system 14, Fig. 3), a mechanical connector (threads 42), and an optical guidewire including an elongated shaft (18) having a longitudinal axis and proximal (56) and distal portions (54) having ends, the proximal portion having a substantially constant outer diameter (Fig. 4), an optical pathway configured for passing optical radiation (64), and an internal surface having a proximal portion (inner surface of proximal portion 56, Fig. 4) and

defining an internal chamber (inner space of proximal portion 56) within the elongated shaft extending to the optical pathway; and elongated optical fiber (26 or note that optical system 14 can be an optical fiber) (col. 8, lines 6-11)) extending substantially an entire length of said internal chamber of said elongated shaft; and a ferrule (10) directly connected to said optical fiber (Fig. 3) and having a distal portion (16) with a diameter and an outer surface (Fig. 3), a proximal portion (24) with a substantially constant outer diameter and an outer surface (Fig. 3), the outer diameter being substantially the same as the outer diameter of the elongated shaft proximal portion (note Fig. 7) and configured to have a first position in which said ferrule is secured to the elongated shaft (Fig. 7) and a second position in which the ferrule is released from the elongated shaft (Figs. 3 and 4) and is free to rotate around said longitudinal axis."

It is respectfully submitted, however, that the Hamlin et al. patent does not teach a ferrule directly connected to an optical fiber as is recited in each of independent claims 1 and 17 as well as their respective dependent claims. Moreover, Hamlin et al. does not teach a ferrule having an outer diameter which is substantially the same as an outer diameter of an elongated shaft defining an optical pathway configured for passing optical radiation as is recited in each of the pending claims. Significantly, hollow central support member 10 which the Examiner has characterized as defining a ferrule, is not directly connected to a fiber optic bundle 26 which the Examiner relies upon as a teaching of an elongated optical fiber. Furthermore, removable sheath 18 of Hamlin et al. which the Examiner characterizes as an elongated shaft 18 does not have an outer diameter which is substantially the same as an outer diameter of the hollow central support member 10 which the Examiner identifies as a ferrule. In that regard, the Examiner has also not shown that the proximal portion of the removal of sheath 18 has a substantially constant outer diameter as is required by the claims. Furthermore, it is submitted that Hamlin et al. does not

teach as is recited in independent claim 1 and its dependent claims 2-5, 8, 9, 31 and 32, a ferrule having a first position where it is secured to the elongated shaft and a second position where it is released from the shaft. Additionally, Hamlin et al. also does not teach the ferrule arrangement recited in independent claim 17 and its dependent claims 19, 33 and 34, that is, a ferrule configured to engage a rotatable mechanical connector such that the ferrule rotates when engaged to the mechanical connector.

Accordingly, it is respectfully submitted that the Hamlin et al. patent does not teach each and every limitation set forth in independent claims 1 and 17 or their dependent claims. As such, it is respectfully submitted that each of claims 1-5, 8, 9, 17, 19 and 31-34 recite subject matter which is allowable over the Hamlin et al. reference.

CONCLUSION

For all the reasons stated above, Applicant respectfully submits that the Examiner has erred in rejecting claims 1-5, 8, 9, 17, 19 and 31-34. It is respectfully requested that the Board reverse the rejection of claims 1-5, 8, 9, 17, 19 and 31-34 and allow claims 1-9, 17-19 and 31-34 to issue.

Respectfully submitted,

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VIII. CLAIMS

1. An elongated intracorporeal optical instrument, comprising:
 - a. an elongated shaft having a longitudinal axis and proximal and distal portions having ends, the proximal portion having a substantially constant outer diameter, an optical pathway configured for passing optical radiation, and an internal surface having a proximal portion and defining an internal chamber within the elongated shaft extending to the optical pathway;
 - b. an elongated optical fiber extending substantially an entire length of said internal chamber of said elongated shaft; and
 - c. a ferrule directly connected to said optical fiber and having a distal portion with a diameter and an outer surface, a proximal portion with a substantially constant outer diameter and an outer surface, the outer diameter being substantially the same as the outer diameter of the elongated shaft proximal portion, and configured to have a first position in which said ferrule is secured to the elongated shaft and a second position in which the ferrule is released from the elongated shaft and is free to rotate around said longitudinal axis.
2. The optical instrument of claim 1 wherein the ferrule is configured to be secured to the elongated shaft by a friction fit.
3. The optical instrument of claim 2, wherein said friction fit comprises contact between at least a portion of said ferrule outer surface and a portion of said elongated shaft inner surface.
4. The elongated intracorporeal optical instrument of claim 1, wherein said intracorporeal instrument comprises an optical guidewire.

5. The optical instrument of claim 2, wherein said ferrule distal outer surface comprises a surface selected from the group consisting of cylindrical surfaces, tapered surfaces, rounded surfaces, and combinations thereof.

8. The optical instrument of claim 1, wherein said ferrule proximal portion is configured to form an operable optical connection with another optical instrument.

9. The optical instrument of claim 1, wherein said ferrule proximal portion is configured to form an operable mechanical connection with another instrument.

17. A system comprising:

an optical instrument having an optical connector and a rotatable mechanical connector, and an optical guidewire, said optical guidewire comprising:

an elongated shaft having a longitudinal axis, a diameter and proximal and distal portions having ends, the proximal portion having a substantially constant outer diameter, an optical pathway in the distal portion configured for passing optical radiation, and an internal surface defining an internal chamber within the elongated shaft extending to the passage in the distal end;

an elongated optical fiber extending substantially an entire length of the internal chamber of the elongated shaft; and

a ferrule directly connected to said optical fiber and having a distal portion and a proximal portion, the proximal portion having a substantially constant outer diameter being substantially the same as the outer diameter of the shaft proximal portion and configured to have a position in which the ferrule is free to rotate around said longitudinal axis with respect to the elongated shaft, said ferrule being configured to engage said optical connector effective to pass optical radiation between said optical fiber and said optical instrument, said ferrule further

configured to engage said rotatable mechanical connector effective that said ferrule rotates when engaged to said mechanical connector while said mechanical connector rotates.

19. The system of claim 17, wherein said ferrule is releasably engaged with said elongated shaft, wherein said ferrule is configured to be free to rotate around said longitudinal axis with respect to the elongated shaft when said ferrule is retracted from said internal chamber.

31. The optical instrument of claim 1, wherein the ferrule distal portion is configured to be disposed within the shaft internal chamber.

32. The optical instrument of claim 1, wherein the proximal portion of the shaft defines a slot.

33. The optical instrument of claim 17, wherein the ferrule distal portion is configured to be disposed within the shaft internal chamber.

34. The optical instrument of claim 17, wherein the proximal portion of the shaft defines a slot.

IX. EVIDENCE APPENDIX

NONE

X. RELATED PROCEEDINGS APPENDIX

NONE